

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1-37. (Cancelled)

38. (Previously Presented) A cooling system comprising:

 a contactor providing a demand signal;

 a compressor including a motor operable to power said compressor to an ON condition in response to said demand signal;

 a motor protector responsive to motor operating parameters;

 logic circuitry operable to diagnose an operating condition based upon a status of said motor protector and a moving window time average of said compressor operating in said ON condition; and

 an intelligent device in communication with said logic circuitry and operable to indicate said operating condition.

39. (Previously Presented) The cooling system according to Claim 38, wherein said logic circuitry determines an operating time for said compressor and an idle time for said compressor.

40. (Previously Presented) The cooling system according to Claim 38, wherein said logic circuitry determines a length of time said motor is outside of specified operating parameters.

41. (Previously Presented) The cooling system according to Claim 38, further comprising an electrical plug, said logic circuitry being integrated into said electrical plug.

42. (Previously Presented) The cooling system according to Claim 38, wherein said logic circuitry is integrated into said contactor.

43. (Previously Presented) The cooling system according to Claim 38, wherein said intelligent device receives diagnostic information from said logic circuitry.

44. (Previously Presented) The cooling system according to Claim 38, further comprising:

a sensor in communication with said logic circuitry and operable to monitor an operating characteristic of the cooling system wherein said logic circuitry receives said operating characteristic from said sensor and is operable to shut down said compressor based on said operating characteristic.

45. (Previously Presented) The cooling system according to Claim 44, wherein said sensor is a pressure sensor operable to monitor a discharge pressure of said compressor.

46. (Previously Presented) The cooling system according to Claim 44, wherein said sensor is a temperature sensor operable to monitor ambient temperature.

47. (Previously Presented) The cooling system according to Claim 44, wherein said sensor is a voltage sensor operable to monitor electrical voltage being supplied to said motor.

48. (Previously Presented) The cooling system according to Claim 44, wherein said logic circuitry uses said demand signal in conjunction with said sensor to monitor said operating characteristic.

49. (Previously Presented) The cooling system according to Claim 44, wherein said sensor is a current sensor operable to monitor electrical current supplied to said motor.

50. (Previously Presented) The cooling system according to Claim 49, wherein said logic circuitry determines said status of said motor protector based on input from said current sensor.

51-73. (Cancelled)